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*File
contact 602
T.O. 1
EID*



25X1

17 August 1959



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Dear :

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Forwarded herewith is the condensed version of the results of our MR-2 evaluation. You might use this as a guide in restoring the equipment to operating condition.

You will be advised of a change in shipping address in the near future. In the event one or more of the equipments are completed before you receive the new address, please advise the project engineer, who will provide the necessary information.

Very truly yours,



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Enclosure:

MR-2 Recorder/Reproducer Interim Report

WRFO
OC-E/R+D-EP/RID:pjb (13 August 1959)

Distribution:

- Original + 1 - Addressee
- 1 - R+D Subject File
- 1 - EP Chrono

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CB-13 RECORDER/REPRODUCER
Interim Report

5.0 CONCLUSIONS

1. The Capstan drive motor and/or associated electronics fail under normal operating conditions.
2. There is excessive WOW and flutter.
3. The inherent noise level of the playback amplifiers would not allow reliable recordings at low signal levels. Channel one cannot be considered operative.
4. The record function push button does not always make positive contact.
5. The indicator lights associated with the function switches are intermittent.
6. The braking system appears adequate except in rewind operation.
7. Because of the congestion of components, maintenance will be difficult.
8. The unit, when removed from its case, has many protruding components susceptible to breakage.
9. The blower-motor assembly is extremely noisy.
10. The CB-13 instruction lacks sufficient operating, maintenance and technical data.
11. Except for items enumerated herein, the equipment is generally sturdy and well constructed.
12. The flexibility and simplicity of operation can be considered an asset.

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MULTI-SPEED CB-13

PORTABLE TAPE RECORDER/REPRODUCER

One (1) unit required

For use with 1/4-inch magnetic tape on standard reels up to 10-1/2 inches in diameter.

Tape speed 1-7/8, 3-3/4, 7-1/2, 15, 30 and 60 inches per second.

Three track record head

Three track monitor/playback head

Track width 0.040 inches (40 mils)

Head spacing 0.100 inches (100 mils) center to center

Cross talk between heads to be at least 40 DB down

Three record amplifiers: input impedance of track 1 and 3, to accept a 1 volt pulse type signal 1000 ohms, track 2 (center) must have two inputs, one for microphone (microphone to be furnished by the contractor) and one for an external reference tone, 35MV at 2000 ohms.

The microphone must be equipped with a push to talk microphone cutout switch.

Three monitor/playback amplifiers: output impedance 0DB at 1000 ohms.

A monitor phone jack must be provided and a 6 position switch, to switch the monitor between the three record and three playback amplifiers.

Frequency response 250 cps - 160 KC at 60 inches per second.

No erase head.

The tape transport must be equipped with a multi-speed, synchronous capstan drive motor, powered by a power amplifier with crystal or tuning fork control; accuracy 1 part in 2000. Flutter and wow not to exceed 0.5% peak to peak.

Provisions for rewind.

The tape transport must be equipped to permit remote start-stop by Solenoid control. (Solenoid control of capstan idler and braking system to provide fast start and stop and prevent tape overrun after turn off).

All signal input and output Jacks, except head phone and microphone connectors, to be BNC chassis connectors.

The recorder-reproducer must operate from, and have provisions for adjusting to, the existing line voltage, within the limits of 70 to 270 volts 50 to 420 cycles per second, or 24 to 30 volts D.C.

The recorder shall be required to operate over an ambient temperature range of from -10° to +50°C.

The recorder-reproducer must be mounted in a magnesium or aluminum, portable case with dimensions not to exceed 11 x 9 x 19 1/4 inches. The case shall be of rugged design, acceptable to the purchasing agency, and the entire recorder must be constructed to stand the shock and vibration required of mobile equipment. All input, output and power connectors shall be mounted on the rear of the recorder, behind a removable access door. All recorder controls, microphone and head phone jacks are to be mounted on the recorder front panel.
Delivery within 6 months.

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